

Fig 1

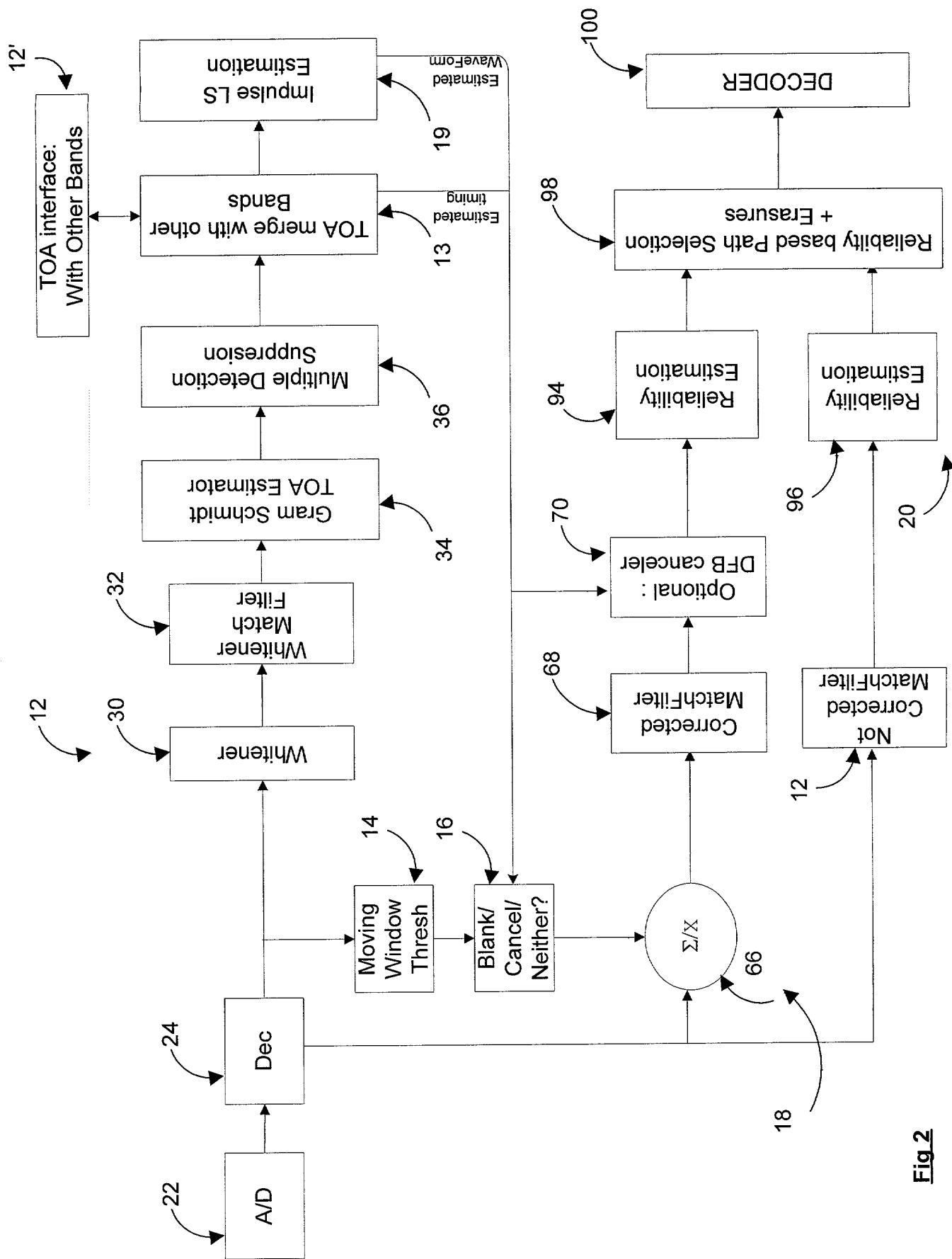
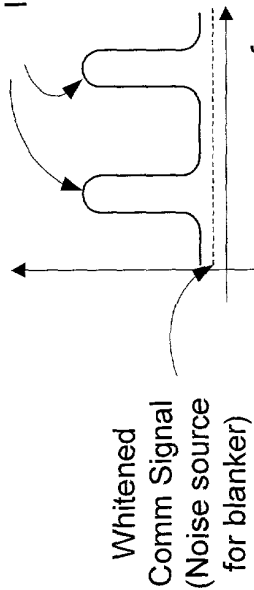


Fig 2

Impulse (on quiet tones)



$X_{mit} + \text{Noise}$

30

Whitener $f(n)$

$y(n)$

Match Filter $f^*(-n)$

32

$y(n) * f^*(-n)$

Ti long FIFO

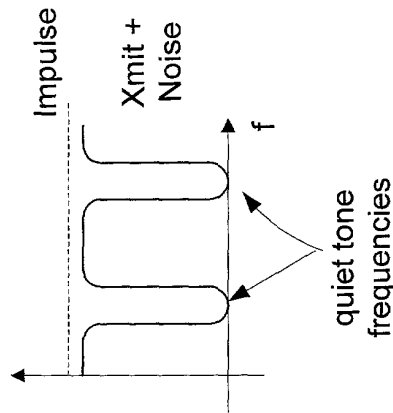
Oldest sample thrown out

Parallel Output of T_i Samples

$F' y(n; n+T_i-1)$

34

36



$X_{mit} + \text{Noise}$

f

Gram Schmidt

42

Eng Summation

44

$Mgs F' y$

Divide into T_g size groups, find max per group

46

Find Local maxima

48

Threshold Local Maxima

50

TOA

Fig 3

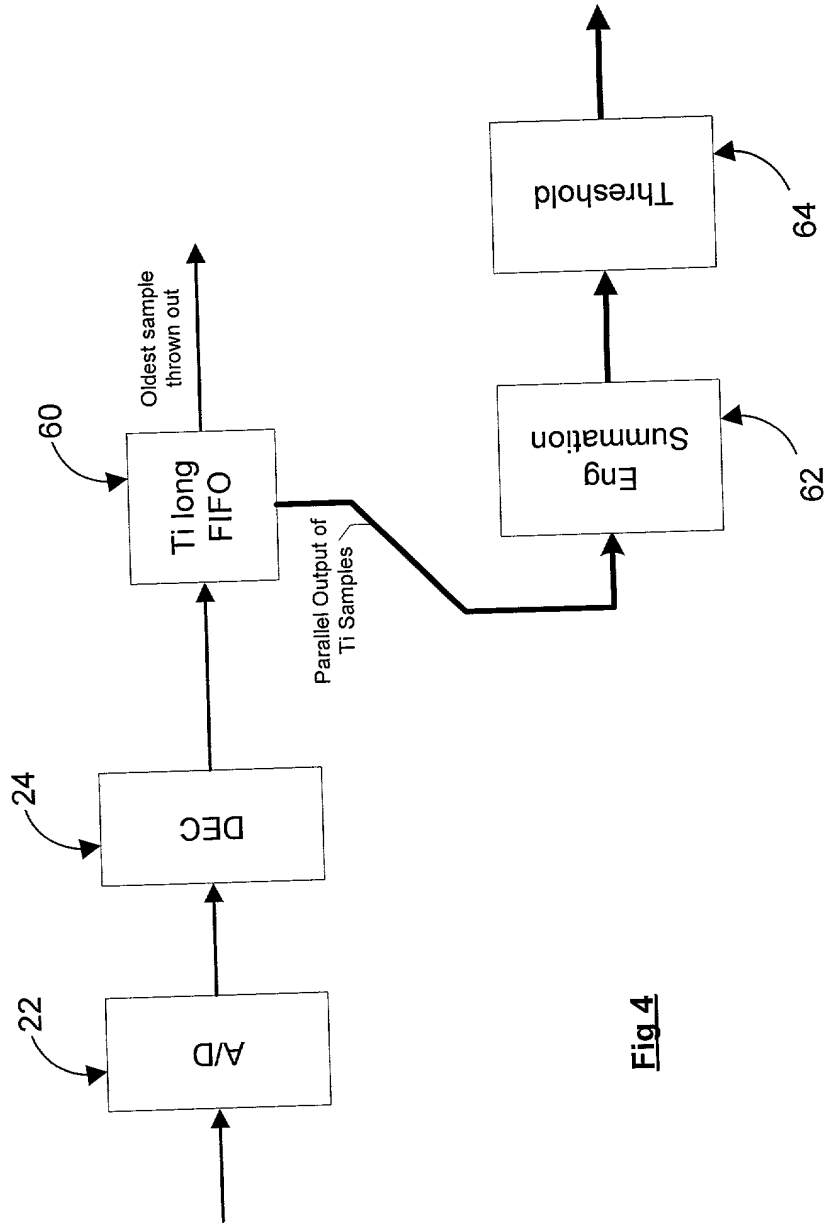


Fig 4

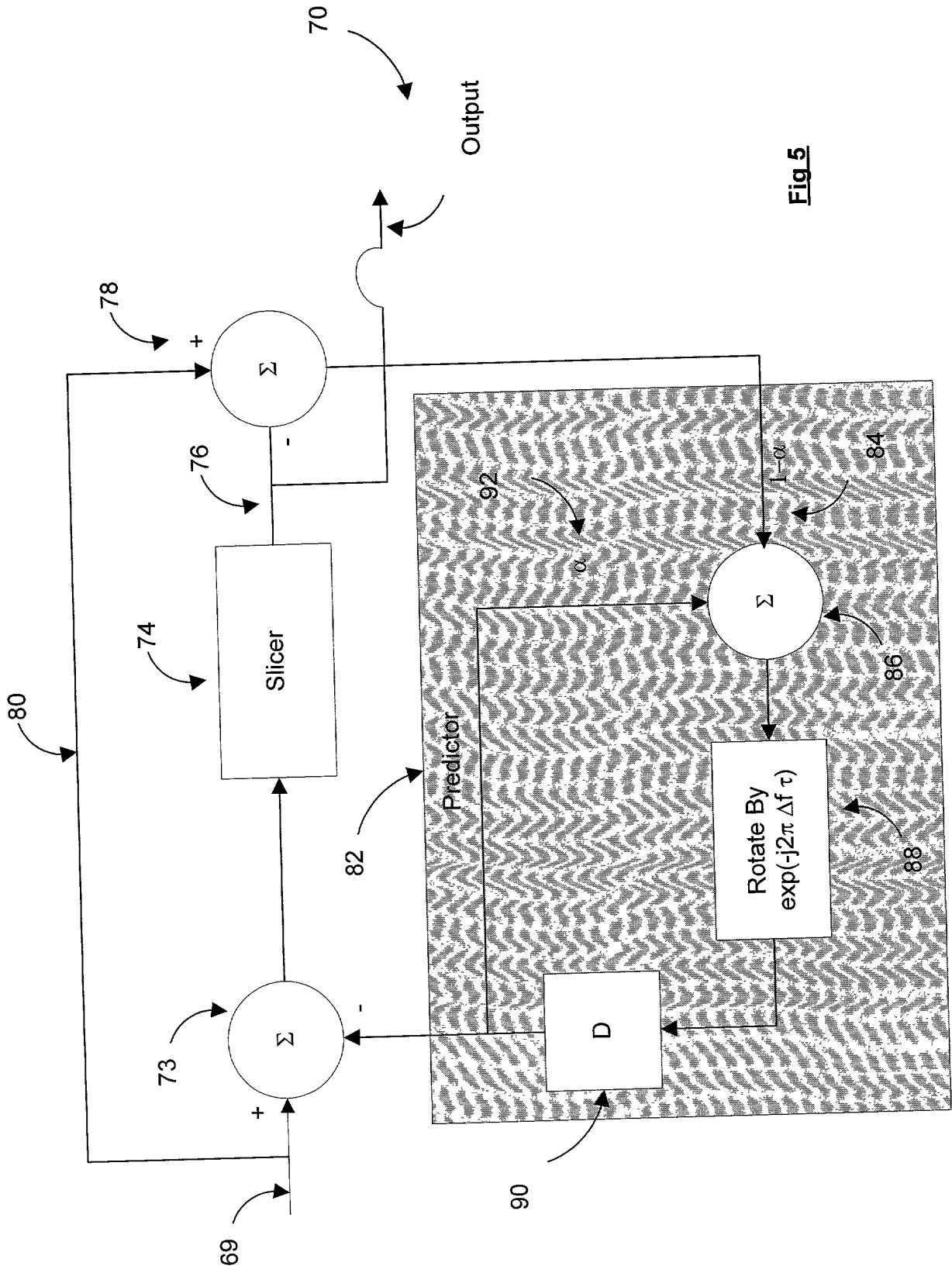


Fig 5